

Application No. 10/800,625  
Reply to Office Action of September 6, 2005

IN THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 15 and 16. This sheet, which includes Figs. 14-16, replaces the original sheet including Figs. 14-16.

Attachment: Replacement Sheet

REMARKS/ARGUMENTS

Favorable reconsideration of this application as currently amended and in view of the following remarks is respectfully requested.

Claims 24-31 are currently active in this case. Claims 24-31 have been added by the current amendment. No new matter has been added.<sup>1</sup>

In the outstanding office action, claim 1 was rejected under 35 USC 103(a) as being unpatentable over Cao in view of Lam et al.; and Figs. 15 and 16 were objected to for not being identified as “Prior Art.”

In response to the objections to Figs. 15 and 16 for not being identified as Prior Art, the applicants have filed herewith a replacement sheet including Figs. 15 and 16 identified as Prior Art. No further objection on this basis is anticipated.

Briefly recapitulating, the present invention (claim 24) provides “a semiconductor optical waveguide,” wherein a single device plays two roles as an optical signal detector and an optical modulator. In addition, as claim 24 recites “a traveling wave electroabsorption modulator” made of “a semiconductor” material and “absorbing the first optical signal” (fourth paragraph in the body), the device absorbs an input optical signal to be output outside as a photocurrent.

Cao, on the other hand, discloses that the optical signal photodetector (PHOTODET) and the traveling wave electro-optic modulator (MODULATOR) are not formed as a single device, a feature of the present invention. Moreover, since the MODULATOR, which is a traveling wave electro-optic modulator made of Lithium Niobate, does not absorb an optical signal input, a photocurrent cannot be taken out.

---

<sup>1</sup> Regarding claim 24, see Figs. 2, 7, and 11 and the corresponding written description. Regarding claim 25, see Figs. 1, 2, 7, 10, and 11 and the corresponding written description. Regarding claim 26, see Figs. 2, 7, and 11 and the corresponding written description. Regarding claim 27, see Figs. 3 and 12 and the corresponding written description. Regarding claims 29 and 30, see Figs. 7 and 11 and the corresponding written description. Lastly, regarding claim 31, see page 9, second paragraph of the Specification.

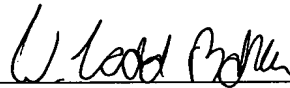
Lam et al. merely disclose that the traveling wave electroabsorption modulator is used as an external modulator. As shown in a representative drawing on the front page of the abstract, one terminal of the traveling wave electroabsorption modulator is terminated by a resistor (i.e., a load). Because a photocurrent, which is output from the port from which the resistor is connected, is dissipated by the resistor, the photocurrent cannot be taken out. That is, Lam et al. disclose a modulator that modulates input light in accordance with an external electric signal input at an input port 14. Lam et al. do not disclose the features highlighted above regarding claim 24 or address the deficiencies of Cao.

For the foregoing reasons, Cao is not believed to anticipate or render obvious the subject matter defined by claim 14 when considered alone or in combination with Lam et al. Dependent claims 25-31 are believed to be allowable for at least the same reasons that claim 24 is believed to be allowable.

Consequently, no further issues are believed to be outstanding and the application is believed to be in condition for allowance. An early and favorable action is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



---

Gregory J. Maier  
Attorney of Record  
Registration No. 25,599

Customer Number

**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 06/04)

W. Todd Baker  
Registration No. 45,265